

#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application	on ot
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Applicant: Serial No.: Wang et al. 10/766,297

Filed:

January 28, 2004

For:

FISCHER-TROPSCH SYNTHESIS USING MICROCHANNEL TECHNOLOGY AND NOVEL CATALYST

AND MICROCHANNEL REACTOR

Art Unit: Examiner: Not yet known Not yet known

#### INFORMATION DISCLOSURE STATEMENT

1. Pursuant to 37 C.F.R. 1.97 and 1.98, and in compliance with 37 C.F.R. 1.56, the Office's attention is directed to

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1345

Sir:

list	ed docum	pending applications, publications and other information listed on the attached PTO-1449. A copy of each ent is enclosed except for: (a) pending applications or (b) those previously cited or submitted to the Office application relies for an earlier filing date under 35 U.S.C. 120:
	Serial No Filing Dat	
Ap alti	plicant(s)	believe(s) the same may qualify as "prior" art to this application and should be treated accordingly, blicant(s) reserve(s) the right to contest the prior art status of any document, publication or information, arise.
this	s Stateme	g each listed document that is not in the English language, an English-language translation accompanies nt as indicated on the attached PTO-1449 or a concise explanation of the relevance of the document is be following document(s): *
	(a)	Copy of each English language version of a search report indicating the degree of relevance found by the foreign office of each document being submitted from the search report.
	(b)	Attachment entitled "Concise Explanation of Relevance of Non-English Language Documents".
3.	Pursuant	to 37 C.F.R. 1.97(b) this Statement is being filed (one must be checked):
	(a) <u>x</u>	Within 3 months of the filing date, date of entry into the National Stage, or filing date of CPA.
	(b)	Before the mailing date of a first Office Action on the merits. If this Statement is not filed before the mailing date of a first Office Action on the merits, the required certification is given below or, in the absence thereof, the Office is authorized to charge the required fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988 for consideration of this Statement.
	(c)	Before the mailing date of a first Office Action on the merits after a first or second submission after fina rejection under 37 C.F.R. 1.129(a).

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& TRAD	ELL	(d)		After the period set forth in 37 C.F.R. 1.97(b) but before the mailing date of either a final action or a notice of allowance.
			(1)	The required certification is given below, or
Ų.			(2)	Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(p) for consideration of this Statement, or
			(3)	Charge the fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988
		(e)		After the mailing date of either a final action or a notice of allowance, but before payment of the issue fee. Petition hereby is made for consideration of this Statement and the required certification is indicated below.
			(1)	Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(p), or
			(2)	Charge the fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988.
	4.	Се	rtificat	on (if applicable)
•		(a)	_	The undersigned hereby certifies that each item of information contained in this Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than 3 months prior to the filing of this Statement.
:		(b)		The undersigned hereby certifies that no item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the undersigned's knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. 1.56(c) more than 3 months prior to the filing of this Statement.
				missioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit 18-0988.

Respectfully Submitted,

RENNER, OTTO-BOISSELLE & SKLAR, LLP

Neil A. DuChez

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### **CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8**

I hereby certify that this correspondence (along with any paper referenced as being attached or enclosed) is being deposited on the below date with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: <u>04/67/64</u>

Janet Farr

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n PTO-1449 (Modified)

# LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Atty Docket No.	Serial No.			
02-103	10/766,297			
Applicant: Wang et al.				
Filing Date	Group			
01/28/04				

# U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	4,392,362	07/12/83	Little	62	514	
	4,516,632	05/14/85	Swift et al.	165	167	
	4,585,798	04/29/86	Beuther et al.	518	715	
	5,036,032	07/30/91	Iglesia et al.	502	260	
	5,309,637	05/10/94	Moriarty	29	890.054	
	5,317,805	07/07/94	Hoopman et al.	29	890.03	
	5,534,328	07/09/96	Ashmead et al.	428	166	
	5,611,214	03/18/97	Wegeng et al.	62	498	
,ŧ	5,727,618	03/17/98	Mundinger et al.	165	80.4	
	5,733,839	03/31/98	Epinoza et al.	502	336	
	5,811,062	09/22/98	Wegeng et al.	422	129	
	5,858,314	01/12/99	Hsu et al.	422	211	
	6,075,062	07/13/00	Zennaro et al.	518	715	
	6,126,723	10/03/00	Drost et al.	96	4	
	6,129,973	10/10/00	Martin et al.	428	166	
	6,136,868	10/24/00	Culross et al.	518	700	
	6,216,343 B1	04/17/01	Leland et al.	29	890.032	
	6,192,596 B1	02/27/01	Bennett et al.	34	76	
	6,200,536 B1	03/13/01	Tonkovich et al.	422	177	
	6,220,497 B1	04/24/01	Benz et al.	228	118	
	6,230,408 B1	05/15/01	Ehrfeld et al.	29	890.039	
	6,262,131 B1	07/17/01	Arcuri et al.	518	700	
	6,313,393 B1	11/06/01	Drost	136	201	
	6,352,577 B1	03/05/02	Martin et al.	96	4	
	6,353,035 B2	03/05/02	Manzer et al.	518	700	

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	6,368,997 B2	04/09/02	Herron et al.	502	302	
	6,381,846 B2	05/07/02	Insley et al.	29	890.039	
	6,415,860 B1	07/09/02	Kelly et al.	165	748	
	6,451,864 B1	09/17/02	Wang et al.	518	715	
	6,476,085 B2	11/05/02	Manzer et al.	518	715	
	6,488,838 B1	12/03/02	Tonkovich et al.	208	108	
	6,491,880 B1	12/10/02	Wang et al.	422	211	. <u>-</u>
	6,537,945 B2	03/25/03	Singleton et al.	502	327	
	6,540,975 B2	04/01/03	Tonkovich et al.	423	659	
<del> </del>	6,558,634 B1	05/06/03	Wang et al.	422	173	
	2002/0028853A1	03/07/02	Manzer et al.	518	713	
	2002/0188031 A1	12/12/02	Kibby	518	715	
	2003/0105171 A1	06/05/03	Subramanian et al.	518	715	

## FOREIGN PATENT DOCUMENTS

Examiner	Document Number	Date	Country	Class	Sub-	Translation	
Initial					class	Yes No	
	97/32687	12/09/97	wo			Abstract	
	98/55812 •	10/12/98	wo				
	00/06295 /	10/02/00	wo				
	01/10773 A1 ·	15/02/01	wo				
	01/12312 A2	22/02/01	wo				
	01/54807 A1	02/08/01	wo				
	01/95237 A2 r	13/12/01	wo				
	03/078052 A1	25/09/03	WO			<del>-</del>	
	0 904 608 B1	19/12/01	EP				
	01/12753 A1 ,	22/02/01	wo				
	1 362 634 A1 🍻	19/11/03	EP				
	03/106386 A2 `	24/12/03	wo				

# OTHER ART

Examiner Initial				
	Matlosz et al.; "Microreactors as Tools in Chemical Research"; Microreaction Technology; IMRET 5: Proceedings of the Fifth International Conference on Microreaction Technology.			

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.	
	Srinivasn et al.; "Micromachined Reactors for Catalytic Partial Oxidation Reactions"; AIChE Journal; November 1997; Vol. 43, No. 11; pp. 3059-3069.	
TeGrotenhuis et al.; "Optimizing Microchannel Reactors by Trading-Off E and Reaction Kinetics through Temperature Management; Prepared for presentation at IMRET 6 - 6 <sup>th</sup> International Conference on Microreaction Technology; March 2002.		
	Wegeng et al.; "Compact Fuel Processors for Fuel Cell Powered Automobiles Based on Microchannel Technology"; Fuel Cells Bulletin No. 28; pp. 8-13.	
Rostami et al.; "Flow and Heat Transfer for Gas Flowing in Microchannels Review"; Heat and Mass Transfer 38 (2002) 359-367.  Lekhal et al.; "Impact of Drying on the Catalyst Profile in Supported Impre Catalysts"; Chemical Engineering Science 56 (2001); 4473-4487.		

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Information Disclosure Statement PTO-1449 (Modified)

The identification of any reference is not intended to be, and should not be understood as being, an admission that such publication, in fact, constitutes "prior art" within the meaning of applicable law since, for example, a given reference may have a later effective date than first seems apparent or the reference may have an effective date which can be antedated. The "prior art" status of any reference is a matter to be resolved during prosecution.

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